

REMARKS

The claims were rejected over the prior art based on Section 103 and under Section 112.

Is There Support for the Cup-Shaped Heater Claimed in Claim 1, Line 6?

Claim 1, line 6, calls for “forming a cup-shaped heater electrically coupled to said tubular electrical connection.”

In the illustrated embodiment, the tubular electrical connection could constitute the element 18. The cup-shaped heater is the element 22 in Figure 1. The element 22 is expressly described as resistive or a lower electrode “that may also be tubular and cup-shaped.” See page 4, lines 14 and 15 of the specification. On page 8, lines 8 and 9 of the specification, it is stated that “the lower electrode 22 provides the heat for producing phase changes at lower currents.”

There is support for a cup-shaped heater and, therefore, reconsideration is respectfully requested.

Is The Claim Element “Forming a Cup-Shaped Heater” Indefinite Under Section 112, Second Paragraph?

The same language is also objected to as failing to particularly point out and distinctly claim the subject matter which the Applicant regards as his invention. Plainly this material was set forth in the specification all along. The same subject matter was always claimed in dependent claims 7 and 8.

While it is not understood what is intended to be referred to as “delineated in the instant application,” the claimed subject matter is explicitly set forth in the specification. There is nothing indefinite about the words forming, cup-shaped, or heater. The specification explains that the element 22 is cup-shaped, that it is an electrode, and that it provides heat. A thing that provides heat is a heater. Therefore, there can be no basis for a rejection based on indefiniteness and reconsideration is respectfully requested.

Is Claim 1 Obvious Over Lowrey Taken With Harshfield ‘720?

The prior art rejection is somewhat unclear because the asserted basis is the combination of Lowrey in view of Harshfield ‘720. However, there is a discussion in the office action of the Harshfield ‘287 reference, which is apparently included through inadvertence.

The office action argues that Lowrey teaches a cup-shaped electrode. But, even if this is so, Lowrey still does not teach an electrode that couples to a tubular electrode which couples to a cup-shaped electrode. Harshfield '720 shows a non-cup-shaped solid electrode. From this, it is concluded that it would have been obvious to one skilled in the art to have employed a two portion electrode. However, Harshfield teaches two solid (non-tubular, non-cup-shaped) portions. There is no two portion tubular electrode. Thus, even if the Examiner's argument is true that it would have been obvious to employ a two portion electrode, one would employ a two portion solid electrode as shown in Harshfield. There is no suggestion of why or how to connect two tubular electrodes in the fashion claimed.

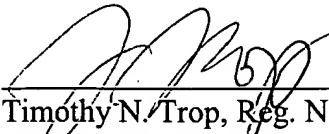
The argument that the advantages of the claimed invention could be achieved by Lowrey is simply not true. Lowrey uses a cup-shaped electrode in one embodiment, but he does not have the tubular extension that couples to a cup-shaped electrode. In effect, two cup-shaped electrodes may be considered to have been stacked one on top of the other in the present application. This allows the phase change material to be nestled in the top electrode and to use a lower electrode which extends from a base electrode through a dielectric layer. Since the lower electrode is also tubular, it can be very heat efficient. For example, the internal area of the tubular electrode may be filled with an insulator to prevent heat loss.

There is no way to do this with Lowrey alone. While one could use a cup-shaped electrode, if one were to put the phase change material in the cup-shaped electrode, one still must contact the cup-shaped electrode from below. This is conventionally done, as shown in both Lowrey and Harshfield '720 by a solid contact. The idea of coupling the solid contact electrode to the cup-shaped electrode through another tubular electrode is no where suggested.

The argument that a two portion electrode is suggested in the art simply fails to address the invention as claimed. The claimed invention calls for two tubular portions which are stacked, the top tubular portion receiving the phase change material and the lower tubular portion receiving an insulator. This is no where suggested in any cited reference. No office action to date has provided any rationale from within any reference to modify the solid structure shown in the '720 Harshfield reference or the single tubular embodiment assertedly taught by Lowrey to reach the claimed scope. Therefore, a *prima facie* rejection has not been made out.

Respectfully submitted,

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